

January 23, 1967

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To:

OSA - 0470-67

Subject: INCOMPATIBILITY OF VISOR CLEANING
AGENT USED ON OUR PROGRAMS

Dear Joe:

It recently came to our attention that the liquid you use for cleaning plastic visors and sunshades at all our facilities had never been submitted to us for compatibility checks, as regards the vehicle's primary material. Your [] has now provided [] with a sample of this cleaner, Indosil 301, and our standard tests have shown it to be incompatible.

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You have probably been unaware of this particular problem area, but considerable effort has been expended throughout our program toward weeding out all such undesirable materials. "Incompatibility", as used here, refers to the ability of certain chemical agents, even in trace form, to induce severe stress corrosion of our structure under high temperature conditions. This is a very real problem at this vehicle's flight speed, although under normal household or industrial use our metal is noted for its resistance to most chemical effects. We have had to outlaw such everyday materials as liquid Joy for leak checking, and tool grips of polyvinyl plastic. We have also resorted to strict preventive measures against trace contamination by secondary contact; for example, wrenches which have been used on ordinary cad plated bolts and fittings are prohibited from use on the article.

From this brief background you will readily appreciate our concern as to the incompatible Indosil 301 liquid.

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We are assured by [] that at least in the BW-3 operation the use of this cleaner is confined to the Personal Equipment area; they state that under no circumstances would it ever be taken near the article for cleaning up last minute smears or handprints, and therefore could not be dripped on the cockpit and chine structure.

However, as the airframe manufacturer we are obliged to take the same broad viewpoint on this material as we apply to all other "backroom" incompatibles, in order to safeguard the vehicle against human error. (Note that out of our entire listing of such incompatibles only one other is now in use, and concerted effort is being made to suitably replace it.)

We therefore request that you take immediate action toward selection of an Indosil 301 replacement which will satisfy your cleaning and anti-static requirements without harm to the face-heat coating, and will also meet our compatibility tests. For your chemist's information some of the cleaning agents now on our lists are as follows, although to our knowledge none have the static-free characteristics of your Indosil 301:

NON-COMPATIBLE:

Liquid Lux with Dermasil
Liquid Vel
Liquid Joy
Liquid Ivory
Liquid Swan
Liquid Orvus K, in 1 to 1 mix with water.
Indosil 301

COMPATIBLE:

Liqui-Nox
Turco #5298
Tergitol Nonionic TMN
Calla #301
Orvus Paste WA, unmixed
Keim Mirror Cleaner (liquid)

Our compatibility tests are based on actual stress corrosion checks, on a GO/NO GO basis, and not on chemical analysis. We do know, however, that in order to meet this check a product must at least be free of the halogens such as chlorine, iodine, bromine, and fluorine, in free state, and compounds bearing cadmium, mercury, or chlorine.

It is also of interest that minor changes by the manufacturer can change the characteristics of a supposed "standard" product, such that periodic rechecks are required. For example, we originally used liquid Joy soap for leak checking the article, until some unadvertised improvement turned it incompatible.

We stand ready to apply our standard compatibility checks to any cleaners that you determine are otherwise suitable for helmet purposes. Samples for this purpose should be sent to in the amount of about 2 oz. each, in well-labeled glass bottles. The bottles should be thoroughly pre-rinsed with plain distilled water, and the caps should be screwed on over a piece of polyethylene film.

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At our end, so far, we have already initiated compatibility tests on the following products:

Kodak Lens Cleaner, although it is believed to have only minor anti-static characteristics.

SureFire Plastic Cleaner (WILCO Company, Green Bay and Los Angeles), purchased locally from one of the authorized Plexiglass distributors, and recommended by them as both an excellent cleaner and an anti-static.

STAT-SKAT (Fostoria Corp., Huntingdon Valley, Pa.). This is not a cleaner, but could be applied after cleaning with the already approved Liqui-Nox, for example. The material is a white jelly-like cream, packaged in a squeeze tube. people consider this an excellent anti-static for optical surfaces.

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It is expected to be about two weeks before the results of our tests are known. [redacted] will keep you advised on these and any other trials we may come up with here, so that you may in turn evaluate the compatible ones from your standpoint.

Best regards,

pac

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cc:

